

POOLEY (J. H.)

Bloody sweat





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BLOODY SWEAT.

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THIS rare affection, which has always excited in a high degree the interest and attention of medical observers, consists essentially of a haemorrhage from the unbroken surface of the skin. But, inasmuch as it takes place from the net-work of small vessels which surround the sweat-glands, and makes its appearance through the opening of the sweat-ducts, it is not inappropriately, after all, named "bloody sweat."

The discharge is generally intermittent, or at least remittent, and paroxysmal in its nature, the intervals varying from a few hours to months. Sometimes it is pure blood which coagulates in crusts or gouts upon the surface, sometimes it is so intermixed with serum or the perspiratory fluid as to be merely a more or less deeply colored bloody liquid.

Its extent varies extremely: it may make its appearance over the whole or nearly the whole of the surface of the body, but more commonly it is confined to some selected regions, generally those in which the skin is thin and delicate. It most frequently appears as a more or less copious and continued oozing from the surface, which, when wiped away, rapidly or slowly reappears from numerous minute or indistinguishable points, but it has been seen to spring up in a distinct jet from the surface.

It is often associated with eruptions upon the skin, but quite as often there is nothing of the kind. Every age and both sexes have furnished examples of it, though it is most common in females, and especially in nervous and hysterical women. Bloody sweat may be pro-

duced by overwhelming mental emotions, and marks the acme of such perturbing passions as terror, anguish, despair, etc.

In these cases and some others it appears to be the result of a purely nervous impression ; while in still others, as in malarial fevers, of which it has been known to form a complication, the immediate cause is of a somewhat different nature. While in some cases it has been associated with scurvy, purpura, and other blood-diseases, this has not generally been the case. It has been simulated chiefly by enthusiastic and dishonest pietists.

Examples of the affection may be found extending throughout the whole range of medical literature, as well modern as ancient, and from a study of these we shall best be able to bring into view its numerous and varying phases.

The eminent French historian De Thou mentions the case of an Italian officer who commanded at Monte-Maro, a fortress of Piedmont, during the war in 1552 between Henry II of France and the Emperor Charles V. This officer, having been treacherously seized by order of the hostile general, and threatened with public execution unless he surrendered the place, was so agitated at the prospect of an ignominious death that he sweated blood from every part of his body.

The same writer relates a similar occurrence in the person of a young Florentine at Rome, unjustly put to death by the order of Pope Sixtus V, in the beginning of his reign, and concludes the narration as follows : " When the youth was led forth to execution, he excited the commiseration of many, and through excess of grief was observed to shed bloody tears, and to discharge blood instead of sweat from his whole body—a circumstance which many regard as a certain proof that Nature condemned the severity of a sentence so cruelly hastened, and invoked vengeance against the magistrate himself, as therein guilty of murder."

Among several examples, given in the German " Ephemerides," of bloody tears and bloody sweat occasioned by extreme fear, more especially the fear of death, may be mentioned that of " a young boy who, having taken part in a crime for which two of his elder brothers were hanged, was exposed to public view under the gallows on which they were executed, and was thereupon observed to sweat blood from his whole body."

It is mentioned by Theophrastus, and by Aristotle, who says, " Some have a bloody sweat," and again, " Some through an ill habit of body have sweat a bloody excrement."

And Diodorus Siculus says of the Indian serpents that, if any one be bitten by them, he is tormented with excessive pains, and seized with a bloody sweat. Galen observes, " Contingere interdum poros ex multo aut fervido spiritu adeo dilatari, ut etiam exeat sanguis per eos fiatque sudor sanguineus" (Sometimes the pores become so much dilated by rapid or fervid breathing that the blood oozes out

through them, and is made a bloody sweat); while Lucan thus describes it :

“ . . . Sic omnia membra  
Emisere simul rutilum pro sanguine virus.  
Sanguis erant lacrymae; quacumque foramina novit  
Humor, ab his largus manat crux; ora redundant,  
Et patulæ nares; sudor rubet; omnia plenis  
Membra fluunt venis; totum est pro vulnere corpus.”

(Thus all the limbs together emitted a red humor the same as blood. The tears were blood; and whatever openings the humor knew, from them flows copious bleeding; the mouth and the distended nostrils overflow; the sweat is red; the veins flow full in all the limbs; the whole body is as if it were a wound.)

The detestable Charles IX of France sank under this disorder, thus described by Mezeray (“*Histoire de France*,” vol. iii, p. 306) : “*La nature fit d’étranges efforts pendant les deux dernières semaines de la vie de la roi. Il s’agitait et se remuait sans cesse; le sang lui rejaillait par les pores et partout les conduits de son corps. Après avoir long-temps suffert, il tomba dans une extreme faibleur et rendit l’âme.*” (Nature made strange efforts during the last two weeks of the life of the king. He was in constant agitation and motion; the blood gushed out from his pores and from all the conduits of his body. After having suffered a long time, he fell into an extreme weakness and gave up his soul.) The same historian relates the case of the governor of a town taken by storm, who was condemned to die, and was seized with a profuse sweating of blood the moment he beheld the scaffold. Lombard mentions a general who was affected in a similar manner on losing a battle. The same writer tells us of “a nun who was so terrified when falling into the hands of ruthless banditti that blood oozed from every pore.” (Schenck, apparently referring to the same case, says that she died of the haemorrhage, in the sight of her assailants.)

Henry ab Heer records the case of a man who not only labored under bloody sweat, but small worms also accompanied the bloody secretion. These were undoubtedly vermicular or worm-like coagula, or clots, formed in the sweat-ducts.

In the memoirs of the Society of Arts of Haarlem we read of the case of a sailor, who, falling down during a storm, was raised from the deck streaming with blood. At first it was supposed that he had been wounded, but on close examination the blood was found to flow from the surface of the body.

Fabricius de Hilden mentions a case that came under the observation of his friend Sporlinus, a physician of Bale: the patient was a child twelve years of age, who never drank anything but water; having gone out into the fields to bring home his father’s flocks, he stopped upon the road, and, contrary to habit, drank freely of white wine. He shortly after was seized with fever. His gums first began to

bleed, and soon after a hæmorrhage broke out from every part of the integuments, and from the nose. A case is also related of a widow, forty-five years of age, who had lost her only son. She one day fancied that she beheld his apparition beseeching her to relieve him from purgatory by her prayers, and by fasting every Friday. The following Friday, in the month of August, a perspiration tinged with blood broke out. For five successive Fridays the same phenomenon appeared. The blood escaped from the upper part of the body, the back of the head, the temples, the eyes, the nose, the breast, and the tips of the fingers. The disorder disappeared spontaneously on Friday, the 8th of March in the following year.

This affection was evidently occasioned by superstitious fears ; and this appears more probable from the periodicity of the attacks. The first invasion of the disease might have been purely accidental ; but the regularity of its subsequent appearance on the stated day of the vision may be attributed to the influence of apprehension. Bartholinius mentions cases of bloody sweat taking place during vehement terror, and the agonies of torture.

The case of Catherine Merlin, of Chamburg, is well authenticated, and worthy of being recorded. She received a kick from a bullock over the pit of the stomach, that was followed by vomiting of blood ; this discharge having been suddenly stopped by her medical attendants, the blood made its way through the pores of various parts of her body, every limb being affected in turn. The sanguineous discharge was preceded by a pricking and itching sensation. The discharge usually occurred twice in the twenty-four hours ; and on pressing the skin the flow of blood could be accelerated and increased. Dr. Fournier relates the case of a magistrate who was attacked with bloody sweat after any excitement, whether of a painful or a pleasurable nature.

In his "Commentaries on the Four Gospels," Maldonato refers to a robust and healthy man at Paris, who, on hearing sentence of death passed on him, was covered with a bloody sweat. Zacchias mentions a young man who was similarly affected on being condemned to the flames. The following case is quoted, in the "Medico-Chirurgical Review," from the French "Transactions Médicale" for November, 1830 : A young woman, aged twenty-one years, of indolent habits and obstinate temper, had been much irritated by some reflections made by her parents on account of her abjuring the Protestant religion. She left the parental roof, and, after wandering about for some time, took up her residence in a hospital. She was then suffering from violent attacks of hysteria, attended with general convulsions. After paroxysms of hysteria, which sometimes lasted twenty-four or thirty-six hours, this young woman fell into a kind of ecstasy, in which she lay with her eyes fixed, sensibility and motion suspended. Sometimes she muttered a prayer, but the most remarkable phenomenon was an exudation of

blood from the cheeks and the surface of the abdomen in the form of perspiration. The blood exuded in drops, and tinged the linen. This bloody perspiration took place whenever the hysterical paroxysm lasted a considerable time.

J. C. Schilling relates the case of a boy, twelve years of age, who was relieved from a severe comatose and convulsive disorder by a bloody sweat which broke out August 2, 1747.

The following note on this subject is from Dr. Schneider, a celebrated German physician: He mentions having been once summoned to a healthy man, fifty years of age, who, for a period of twelve months in succession, had traveled on foot; during the journey he had perspired much in his feet; and, on examining them at the end of it, they were found covered as high as the ankles with a sanguineous perspiration, which had also soaked into and stained his stockings. He quotes, among others, the following remarkable case from Paulini: While surgeon on board a vessel, a violent storm arose, and threatened immediate destruction to all. One of the sailors, a Dane, thirty years of age, with fair complexion and light hair, was so terrified that he fell speechless on the deck. On going to him, Paulini observed large drops of perspiration of a bright-red color on his face. At first, he imagined the blood came from the nose, or that the man had injured himself by falling; but, on wiping off the red drops from his face, he was astonished to see fresh ones start up in their place. The colored perspiration oozed out from different parts of the forehead, cheeks, and chin; but was not confined to these parts, for, on opening his dress, he found it formed on the neck and chest. On wiping and carefully examining the skin, he distinctly observed the red fluid exuding from the openings of the sweat-ducts. So deeply stained was the fluid that, on taking hold of the handkerchief with which it was wiped off, the fingers were made quite bloody. As the bloody perspiration ceased, the man's speech returned; and when the storm passed over he recovered, and remained quite well during the rest of the voyage.

Erasmus Wilson, in his work on "Diseases of the Skin," mentions two cases which had come under his own observation, and refers to three others. M. Du Gard has recorded the case of a child three months old that was taken with bleeding at the nose and ears, and on the hinder part of the head, which lasted for three days, and afterward the nose and ears ceased bleeding, but still the blood-like sweat came from the head. Three days before the death of the child, which happened the sixth day after it began to bleed, the blood came more violently from its head, and streamed out to some distance. It also bled on the shoulders and at the waist; and for three days at the toes, at the bend of its arms, at the joints of the fingers, and at the finger-ends.

Dr. John Mason Good remarks that *ephidrosis cruenta*, which he

defines as cutaneous perspiration intermixed with blood, has taken place during vehement terror, and not unfrequently during the agony of hanging, or the torture. It is said, also, in some instances, to have occurred in new-born infants, probably from the additional force given to the circulation in consequence of a full inflation of the lungs, accompanied with violent crying.

The following remarkable case is related by Hebra, in his work on "Diseases of the Skin": "The patient was a young man, strong and well-nourished, who was attacked repeatedly by haemorrhage from the surface of the lower limbs. This generally occurred during the night, so that he first became aware that the bleeding had taken place by finding the sheets stained with spots of blood when he awoke. I once, however, saw blood flow from the uninjured back of the hand of this patient while he was sitting near me at table. The blood formed a jet, which would about correspond in size to the duct of a sweat-gland. This jet had also a somewhat spiral form, and rose about one line above the surface of the skin." An exceedingly interesting case was reported by Dr. Hart, in the "Richmond and Louisville Medical Journal," January, 1875, p. 98.

The most recent case that I have found is the following from an informal "Report of the Proceedings of the King William County (Virginia) Medical Association," by George William Pollard, M. D., and published in the "Virginia Medical Monthly" for January, 1880, p. 816: "Among a number of interesting cases reported at the last meeting of the King William County Medical Association, was one by Dr. R. G. Hill, of bloody sweat, the subject being a boy four years of age, suffering from malarial fever.

"During each sweating stage, blood oozed from the face and neck. Febrifuges followed by quinine afforded relief; but two months later he was taken with haemorrhage from the bowels. This condition was accompanied with vomiting of blood, from which he died."

I have been able to collect in all forty-seven cases of this strange and interesting disorder; and, when we consider the long period over which this research extends and the tolerable certainty that every case of this kind has found its way into print, this number may surely be received as an indication that it is extremely rare. One of the lower animals, the hippopotamus, sweats blood, at least when brought to this country and kept in a state of confinement, as I myself have witnessed; the instance thus seen occurred during hot weather in the latter part of summer.

As already stated, sweating of blood has been simulated by religious enthusiasts, the following instructive example of which is taken from Hebra: "More than ten years ago there lived in a village not far from Vienna a woman who was said to take neither food nor drink, and who asserted that every Friday, between the hours of 10 A. M. and noon, haemorrhage occurred spontaneously from her skin at

various points, but especially from her face, feet, and hands. The parts were, in fact, said to be the same from which blood flowed during the crucifixion of our Lord. Now, as this occurrence created a great sensation in the neighborhood, and attracted numerous pilgrims from all parts of the country, the authorities found themselves compelled to make a thorough investigation of the matter. Dr. Haller, a physician who held a high position in the General Hospital at Vienna, was sent to the spot, with the necessary staff of police, in time to place the woman under surveillance on a Thursday, and to bring her before the Friday to Vienna. Here she was placed in a room, so that she could be watched uninterruptedly night and day, by medical men. The Friday came, and the woman did not bleed. She, however, took nothing that day nor till the evening of Saturday, when, tormented by hunger, she asked for food, and ate a considerable quantity. From this time she took nourishment regularly, and the haemorrhage never returned. The case just related is probably similar to not a few others which are recorded in the history of spontaneous haemorrhages (under the name of stigmata, etc.), but which were never brought into the clear light of scientific investigation, so as to be examined without prejudice and—*explained*."

These impostors, the so-called stigmata, still make their appearance from time to time in Catholic countries, as is shown by a cheap publication evidently intended for circulation among the ignorant faithful, which I recently came across, and which has the following extended title-page: "Letter from the Earl of Shrewsbury to Ambrose Lisle Philips, Esq., descriptive of the Ecstatica of Caldasa, and the Addolorato of Caspiana; being a second edition, revised and enlarged; to which is added the Relation of Three Successive Visits to the Ecstatica of Monte Sansavino, in May, 1842. First American, from the last revised London edition; with Additional Letters now first published; bringing the Narrative down to 1842. 'It is honorable to reveal and confess the works of God' (Tobias xii, 7). New York, 1843."

In this publication fifty similar cases are adduced, which are said to have received the attestation of the Church. Of those with which the book itself is concerned, one is said to eat nothing but a little fruit; of another it is asserted: "Indeed, she may be truly said to subsist upon air; for, on the 15th of August next, it will be *eight years complete since she ate, drank, or slept!*" (Where is Dr. Tanner after this?)

It is a noteworthy fact that these cases were all those of poor peasant-girls, in secluded, out-of-the-way hamlets, among a rustic and ignorant population; they were plainly hysterical and cataleptic, visited by hundreds of wondering, half-adoring spectators, who were ready to fall down and worship them. We have here everything that could stimulate and aid deception, and nothing at all of

the "clear light of scientific investigation" to which Hebra's case was subjected.

With regard to the so-called bloody sweat of our Saviour, such an undoubted article of faith to many, and so familiar to our ears in the pathetic invocation of the Litany of the Episcopal Church, "By thine agony and bloody sweat," the once celebrated Dr. Mead makes the following observations in his "*Medica Sacra*": "Saint Luke relates of Christ himself that, when he was in an agony by the fervency of his prayers, his sweat was like drops of blood falling down on the ground. This passage is generally understood as if the Saviour of mankind had sweated real blood. But the text does not say so much. The sweat was only *hosoi thromboi aimatos*, as it were, or like drops of blood; that is, the drops of sweat were so large, thick, and viscid, that they trickled to the ground like drops of blood. Thus were the words understood by Justin Martyr, Theophylactus, and Euthymius."

Beza's Latin Testament renders the words, "Erat autem sudor ejus quasi grumi sanguinis descendentes in terram." (But his sweat was as drops of blood falling upon the earth.)

Luther's German version has, "Es ward aber sein Schweiß wie Blutstropfen die fielen auf die Erde." (But his sweat was as drops of blood that fell upon the earth.)

The Rhemish Testament, from the Vulgate of Jerome, gives in the translation recognized by the Catholic Church in this country, "And his sweat became as drops of blood trickling down upon the ground."

Our authorized version, "And his sweat was as it were great drops of blood falling down to the ground."

The recent revision changes only a single word, making it, "And his sweat became as it were great drops of blood falling down upon the ground."

Among modern commentators some agree with Whitby, who says, "I own that these words do not certainly signify that the matter of this sweat was blood, but only that it was like to blood, being in such large drops." But the majority hold with Alford, that it was a veritable bloody sweat.

Adam Clarke contends that the passage must be interpreted according as the emphasis is made to rest on *thromboi*, or *aimatos*, and unhesitatingly declares for the latter.

Perhaps it would be better not to add anything to the judicious and non-committal remarks of Dr. Mead, but still I will hazard the following considerations: It is difficult to understand why, if Luke, a clear writer and said to be a physician, wished to state the fact of a bloody sweat, he could not have done so in plain, straightforward language, with no ambiguity about it. If he was, as it is said, a physician, the simile of dropping blood, not an unnatural one in any case for profuse sweat, would be all the more natural and likely to be used.

In the gloom of the garden the color would not be noticed, though the profuseness of the sweat, as its falling proved, might ; furthermore, if it had been blood it would have left stains, if not crusts or coagula behind it, and excited still further notice and remark. From all these considerations I think we have reason enough to conclude that this case of bloody sweat exists only in the affectionate and pious fancy of the Church—come down to us from the former ages, when men would rather believe than examine, and left undisturbed even to these times, when, alas ! men would, as a rule, rather examine than believe.

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## PROTECTIVE MIMICRY IN MARINE LIFE.

BY DR. WILHELM BREITENBACH.

BY mimicry we understand the assumption by animals of a deceptive similarity answering a protective purpose, not only to other animals, but also to lifeless objects, and, in color, to the surroundings. In a biological application, this definition of the term, though different from the common one, is well founded ; for similarity of an animal with any object affords it protection, by enabling it to approach its prey unobserved ; by facilitating its escape from enemies ; or by shielding it, under cover of its resemblance to unpleasant objects, from hostile attacks. A number of observations have been published, by various well-known authors, upon the interesting phenomena of mimicry, but they have related generally to land animals, while the cases of the occurrence of similar phenomena among the inhabitants of the sea have been less extensively noticed. A few have been mentioned by Haeckel and Carus Stern, but I have others, of not less high interest, to describe.

On my voyage from Brazil to England in July, August, and September, 1883, I had many opportunities to secure and examine closely specimens of pelagic life. From the 30th of August to the 5th of September, we crossed the Sargasso Sea, between latitude  $25^{\circ} 12'$  and  $34^{\circ} 39'$ , and longitude  $33^{\circ} 52'$  and  $35^{\circ} 52'$  west. The sea-weeds were not massed in extensive fields, but were distributed in single groups of larger or smaller size, and these were driven by the wind in nearly straight lines, that could be followed with the eye to considerable distances. The linear arrangement was also made distinct to me by its pelagic life, particularly by its great colonies of radiolaria, or polycyrtaria, salpæ, and other orders. Thus, I find in my notes such items as, "September 3d, polycyrtaria in colossal masses, thick, wide bands of them stretching along for miles ; September 14th, immense masses of little salpæ and polycyrtaria, causing the water to display milky bands."

I did not neglect to fish up masses of the Sargasso sea-weed every



